REMARKS

Prior to entry of this paper, Claims 1-20 were pending. Claims 1-10 and 14-20 were rejected. Claim 11-13 were objected to, but were identified as being allowable if rewritten in independent form. In this paper, Claims 14 and 20 are amended; and new Claim 21 is added. Claims 1-21 are currently pending. No new matter is added by way of this amendment. For at least the following reasons, Applicants respectfully submit that each of the presently pending claims is in condition for allowance.

Allowable Claims (11-13)

Claims 11-13 were objected to, but identified as being allowable if rewritten in independent form. Claim 11-13 are respectfully submitted to depend from an allowable claim for at least the reasons stated below.

Examiner Interview

Applicants' representative held a telephonic interview with the Examiner on October 3, 2006, and again on October 4, 2006. Claims 1, 14, and 20 were discussed. Applicants' representative and the Examiner reached an agreement that Applicants' Claim 1 is patentable over the prior art of record. The Examiner requested further argument in this paper regarding Claims 14 and 20.

Claims 1-10 and 21

Each of the rejections to Claims 1-10 is respectfully traversed.

Claims 1-7 were rejected under 35 U.S.C. §102(e) as being anticipated by Di Iorio (U.S. Patent No. 6,838,864). Claims 8-10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Di Iorio (U.S. Patent No. 6,838,864) in view of Smith et al. (U.S. Patent No. 6,075,354, hereinafter "Smith").

The rejection to Claim 1 is respectfully traversed. Claim 1 is respectfully submitted to be allowable at least because Di Iorio fails to disclose, "a controllable portion of the voltage divider circuit is arranged to calibrate the output voltage by adjusting a controllable temperature coefficient

of an impedance of the controllable portion in response to a trim signal", as recited in Applicants' Claim 1.

Di Iorio describes a resistor ladder 304 having a tap point controlled by signal vtrim(0-6). The equivalent series resistance provided by resistor ladder 304 of Di Iorio is adjusted based on signal vtrim. However, the temperature coefficient of the resistance of resistor ladder 304 of Di Iorio is not adjusted by signal vtrim(0:6).

Claim 1 submitted to be allowable for at least the reasons stated above. Claims 2-10 and 21 are submitted to be allowable at least because they depend from Claim 1.

Additionally, Claim 2 is respectfully submitted to be allowable at least because Di Iorio fails to disclose, "a bandgap reference circuit that is arranged to provide the bandgap reference voltage across a biased portion of the voltage divider circuit", as recited in Applicants' Claim 2. As shown in FIG. 2 of Di Iorio, the bandgap voltage is not provided across any portion of voltage ladder 304 of Di Iorio.

Additionally, Claim 8 is respectfully submitted to be allowable at least because the proposed combination of Di Iorio and Smith fails to meet the limitation, "a controllable portion of the voltage divider circuit is arranged to calibrate the output voltage by adjusting a controllable temperature coefficient of an impedance of the controllable portion in response to a trim signal", as recited in Applicants' Claim 1, in conjunction with the limitation "the adjustable temperature coefficient is a second-order temperature coefficient", as recited in Applicants' Claim 8. The proposed combination would adjust a current in the bandgap reference circuit to provide second-order temperature correction, but would not adjust a second-order temperature coefficient of the impedance of a portion of a voltage divider.

Further, Claim 9 is respectfully submitted to be allowable at least because the proposed combination of Dio Iorio and Smith fails to meet the limitation, "a first-order temperature coefficient and a zeroth-order temperature coefficient of the impedance of the controllable portion are each substantially independent of the trim signal", as recited in Applicants' Claim 9. More specifically, in Di Iorio, the voltage ladder 304 has a zeroth-order temperature coefficient that is proportional to signal vtrim(0:6), and is therefore not substantially independent of signal vtrim(0:6).

Additionally, Claim 10 is respectfully submitted to be allowable at least because the proposed combination of Di Iorio and Smith fails to meet the limitation, "the controllable portion includes at least two resistors having substantially different second-order temperatures coefficients", as recited in Applicants' Claim 10.

Claims 14-20

Claim 14 is respectfully submitted to be allowable at least because each of the cited references fail to disclose, "calibrating the reference voltage, wherein calibrating the reference voltage includes adjusting a controllable portion of the voltage divider circuit based on a trim signal, such that a zeroth-order temperature coefficient of a resistance of the controllable portion is substantially independent of the trim signal", as recited in Applicants' Claim 14.

"Zeroth-order temperature coefficient" refers to the temperature-independent portion. For example, to a second-order approximation, a voltage may be given by $V=A+B*(\Delta T)+C*(\Delta T)^2$, where A, B, and C are the zeroth, first, and second order temperature coefficients, respectively, of the voltage V (the polynomial may be expanded to give third order terms, and so on, if an approximation beyond first order was desired). Similarly, to a second-order approximation, a resistance may be given by $R=A+B*(\Delta T)+B*(\Delta T)^2$, where A, B, and C are the zeroth, first, and second order temperature coefficients, respectively, of the voltage V (the polynomial may be expanded to give third order terms, and so on, if an approximation beyond first order was desired). The term "zeroth-order temperature coefficient" is somewhat of a misnomer. It is referred to as a zeroth-order coefficient because the last equation could have been written $R=A*(\Delta T)^0+B*(\Delta T)^1+B*(\Delta T)^2$, since of course $(\Delta T)^0=1$. The first and second order temperature coefficients are in fact temperature coefficients. The term "zeroth-order temperature coefficient" is somewhat of a misnomer in that it is not a *temperature* coefficient at all; rather, the "zeroth-order temperature coefficient" is the temperature-*independent* portion. See Applicants' specification for a more in-depth discussion of "zeroth-order temperature coefficient".

None of the cited references disclose, "calibrating the reference voltage, wherein calibrating the reference voltage includes adjusting a controllable portion of the voltage divider circuit based on

a trim signal, such that a zeroth-order temperature coefficient of a resistance of the controllable portion is substantially independent of the trim signal", as recited in Applicants' Claim 14.

The McClure reference shows a voltage divider 108, which includes a resistor 208 in parallel with a transistor 210. The stress enable signal 106 of McClure may be enabled or disabled. The resistance of this parallel combination of McClure is altered based on whether stress enable 106 is enabled or disabled. In McClure, the zeroth-order temperature coefficient is altered depending on whether the stress enable signal is enabled or disabled. Accordingly, the zeroth-order temperature coefficient of the resistance of the parallel combination of McClure fails to be substantially independent of stress enable signal 106.

Di Iorio describes a resistor ladder 304 having a tap point controlled by signal vtrim(0-6). Firstly, Di Iorio fails to even meet the limitation, "applying a bandgap reference voltage across a biased portion of a voltage divider circuit". It can be seen from FIG. 2 of Di Iorio that the bandgap voltage vbg of Di Iorio is not applied to the resistor ladder 304. Regardless, it can be seen from FIG. 3 of Di Iorio that the zeroth-order temperature coefficient of the resistance of resistance ladder 304 is proportional to signal vtrim (0-6). Accordingly, the resistance of resistor ladder 304 of Di Iorio fails to be substantially independent of signal vtrim (0-6).

Claims 15-19 are respectfully submitted to be allowable at least because they depend from Claim 14. Claim 20 is respectfully submitted to be allowable for reasons similar to those stated above with regard to Claim 14.

CONCLUSION

It is respectfully submitted that each of the presently pending claims (Claims 1-21) are in condition for allowance and notification to that effect is requested. Examiner is invited to contact the Applicants' representative at the below-listed telephone number if it is believed that the prosecution of this application may be assisted thereby. Although only certain arguments regarding patentability are set forth herein, there may be other arguments and reasons why the claimed invention is patentable. Applicant reserves the right to raise these arguments in the future.

Dated: October 17, 2006

Respectfully submitted,

By _____

Matthew M. Gaffney
Registration No.: 46,717
DARBY & DARBY P.C.
P.O. Box 5257
New York, New York 10150-5257
(206) 262-8900
(212) 527-7701 (Fax)
Attorneys/Agents For Applicant